

AMENDMENTS TO THE CLAIMS

Claim 1 (currently amended) A system with enhanced water flux through a filter membrane, the system comprising

an electromagnetic radiator which produces high-power, pulsed blackbody, deep-ultraviolet radiation, the ~~UV reactor~~ electromagnetic radiator having at ~~least~~ least one fluid inlet and at least one fluid outlet and having at least one treatment chamber;

a filtration membrane, the filter membrane disposed adjacent the at least one fluid outlet of the electromagnetic radiator to filter the water irradiated with the ~~pulsed~~ pulsed blackbody, deep-UV irradiation, wherein the precipitation of inorganic molecules and organically complexed minerals, partial or complete mineralization of organic molecules and the deactivation or destruction of microbes caused by ~~the~~ oxidizing species reduce the transmembrane pressure.

Claim 2 (original) The system of Claim 1 wherein the filtration membrane constitutes a microfiltration membrane.

Claim 3 (original) The system of Claim 1 wherein the filtration membrane constitutes of a plurality of membranes.

Claim 4 21 (currently amended) The ~~system~~ method of Claim ~~1~~ 12 wherein oxidation of ~~the~~ a water matrix by the pulsed blackbody UV yields ozone, hydrogen peroxide, and hydroxyl radicals.

Claim 5 (currently amended) The system of Claim 1 further comprising pump and associated valves for backwashing the ~~filtration~~ filtration membrane.

Claim 6 (currently amended) The system of Claim 1 further ~~comprising~~ comprising a pre-filter disposed between the electromagnetic radiator and the inlet to the filter membrane.

Claim 7 (original) The system of Claim 1 in which the electromagnetic radiator comprises a lamp which develops a radiant excittance of between about 40,000 W/cm² to about 170,000 W/cm².

Claim 8 (original) The system of Claim 1 in which the electromagnetic radiator comprises a lamp which develops a peak power output of between about 2 MW to about 6 MW.

Claim 9 (original) The system of Claim 1 in which the electromagnetic radiator comprises a lamp which radiates electromagnetic energy at wavelengths between about 185 nm to about 3,000 nm.

Claim 10 (original) The system of Claim 9 in which about 38 percent to about 52 percent of the output electromagnetic energy has wavelengths in the range of between about 185 nm to about 400 nm.

Claim 11 (currently amended) The system of Claim 1 in which the electromagnetic radiator is can be pulsed at a rate of between about 0.1 to about 30.0 pulses per second.

Claim 12 (currently amended) A method for enhancement of flux through a hollow fiber-type filter membrane, the method comprising the following steps:

treating the water to be filtered by exposure to pulsed blackbody, deep-UV electromagnetic radiation prior to purifying the water with ~~the~~ a hollow fiber-type main filter membrane to prevent fouling of the membrane by the group of contaminants of water consisting of organic molecules, metal ions and complexed minerals.

Claim 13 (original) The method of Claim 12 further comprising the step of backwashing the main filtration membrane.

Claim 14 (original) The method of Claim 13 in which the step of treating the water with radiation lasts for 30 minutes.

Claim 15 (original) The method of Claim 12 further comprising the step of pre-filtering the water prior to filtration of the water through the main filter membrane.

Claim 16 (original) The method of Claim 12 in which the electromagnetic radiation develops a radiant excittance of between about 40,000 W/cm² to about 170,000 W/cm².

Claim 17 (original) The method of Claim 12 in which the electromagnetic radiation develops a peak power output of between about 2 MW to about 6 MW.

Claim 18 (original) The method of Claim 12 in which the electromagnetic radiation has wavelengths between about 185 nm to about 3,000 nm.

Claim 19 (currently amended) The method of Claim 13 in which about 38 percent to about 52 percent of the electromagnetic ~~energy~~ radiation has wavelengths in the range of between about 185 nm to about 400 nm.

Claim 20 (original) The method of Claim 12 in which the electromagnetic radiation is pulsed at a rate of between about 0.1 to about 30.0 pulses per second.